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## INFORMATION REPORT INFORMATION REPORT

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COUNTRY East Germany

REPORT

SUBJECT

DATE DISTR.

8 MAR 1961

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Research at the Laboratory for Nuclear

Physics of the Manfred von Ardenne

Research Institute, Dresden-Weisser Hirsch

NO. PAGES 1

Fragmentary info on equipment: ion source,

REFERENCES

RD

osillograph; vacuum pump, mass separator under construction;

no work being done.

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DATE OF INFO.

PLACE &amp; DATE ACQ.

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Physics of the Manfred von Ardenne Research Institute, Dresden-Weisser  
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3.

von Ardenne was completely satisfied with the ion source, especially since it had been reviewed as the best of its kind. It was exhibited at various fairs, including the Duesseldorf fair. This ion source was used in the molecular spectrograph, in the surface microscope, and in the Van de Graaff accelerator.

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5. Von Ardenne visited Moscow in 1958 to present a paper on his fine beam oscillograph; he visited Moscow again in 1959. Russians visited the von Ardenne Institute from time to time

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6. no work was being done on oscillograph research, the finished product, which was built by von Ardenne and which has been exhibited at trade fairs and technically described in open literature, was in use at the institute for other research.

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Inputs to the deflector plates were carried in by transmission lines. The frequency band widths were unknown but all technical details were contained in the manufacturer's brochure (Vakutronik); the oscillograph was exhibited at the Leipzig Trade Fair.

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7. The ion-getter vacuum pump project at the von Ardenne Institute has been discontinued. The AKK refused further financial aid to anyone in East Germany after von Ardenne proved the pump was not practical since it could only be used on chambers made of very pure materials such as glass (?) and on chambers of

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very small size. Special projects that can be satisfied by these factors still use the pump. Most of the normal vacuum pumps used by von Ardenne's Institute are made by Zeiss, Jena. During the last trade fair at Leipzig von Ardenne saw a large (capacity unknown) vacuum pump exhibited by the Russians. He bought it and subsequently used it to pump the vacuum furnace at the von Ardenne Institute down to about  $10^{-3}$  or  $10^{-4}$  Torr. The furnace, which was about one cubic meter in size, was drawn down to its operating vacuum of  $10^{-5}$  Torr. [redacted] 50X1-HUM

[redacted] the furnace operated at  $10^{-4}$  Torr; this discrepancy was not resolved) by other pumps using liquid air to cool chamber outlets. This method could get other vacuum chambers down to  $10^{-7}$  to  $10^{-8}$  Torr. The incident of the Russian pump is the only case known to Subject of aid from the Soviets. The Soviets, however, were always using developments of the von Ardenne Institute. The director (name unknown) of the Leybold factory in Cologne [redacted] 50X1-HUM

[redacted] visited von Ardenne at his institute once or twice. [redacted] 50X1-HUM

[redacted]

known usage of this furnace was in connection with Prof. Brunolf Baade's visit to the institute when he left an order for some alloy of steel. After Baade received this material, four or five similar furnaces were ordered from the Hochvakuum Institute in Dresden-Weisser Hirsch, apparently for use by the aircraft industry. The von Ardenne Institute had a metallurgist to do research work on the electron beams furnace. The von Ardenne Institute planned to use liquid hydrogen in place of their air coolant to provide a lower and/or faster vacuum condition.

8. The mass separator, which was being built under von Ardenne's direction by the Vakutronik manufacturing company in Dresden, was exactly like the one von Ardenne built in Russia and was to be installed at the Central Institute of Nuclear Physics. [redacted] it was to be an isotope separator and would occupy a space of about eighty cubic meters. 50X1-HUM

9. The Van de Graaff accelerator had been operating for about six months on only one project [redacted] This was the irradiation of samples of rubber from the Elbe plant for various periods and beam strengths. Testing of the rubber samples was done by Elbe with results unknown [redacted] Herr von Minkwitz, assisted by Herr Tuemmler, supervised the operations. 50X1-HUM

10. No cosmic ray research was done at the von Ardenne Institute. 50X1-HUM

[redacted]

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